FEDERAL HOUSING FINANCE AGENCY

ADVISORY BULLETIN

AB 2016–02

FHLBANK CHANGES TO INTERNAL MARKET RISK MODELS

This Advisory Bulletin (AB-2016-02) applies only to the Federal Home Loan Banks.

Purpose

This Advisory Bulletin updates previous guidance on how a Federal Home Loan Bank (Bank) may obtain approval to implement significant changes to a previously approved internal market risk model after proper notification to the Federal Housing Finance Agency (FHFA).[1] This Advisory Bulletin describes the procedures and documentation for the notification process.

This Advisory Bulletin rescinds 2005-AB-06, *Changes to Internal Market Risk Models*.

Background

Each Bank received approval of an internal market risk model used to calculate the market risk component of risk-based capital prior to implementing its capital plan pursuant to 12 CFR § 932.1. Further, 12 CFR § 932.5(d) states:

> Each Bank shall obtain . . . approval of an internal market risk model …. including subsequent material adjustments to the model made by the Bank, prior to use of any model. Each Bank shall make such adjustments to its model as may be directed by the Finance Board.[2]

This section does not establish a specific process to follow for obtaining approval of "subsequent material adjustments." In the absence of specific procedures in a regulation for obtaining a required approval, 12 CFR § 1211.3 (Section 1211.3) establishes a general approval process for the Banks and FHFA to follow. Section 1211.3 authorizes the Deputy Director for Federal Home Loan Bank Regulation or his/her designee to grant approvals for any matters requiring

[1] A Bank that follows the guidance described in this Advisory Bulletin will satisfy the regulatory requirement of prior FHFA approval of material adjustments to a market risk model set forth in 12 CFR § 932.5(d).
[2] This rule was originally adopted by the Federal Housing Finance Board (Finance Board). All Finance Board rules remain in effect until repealed, amended or re-adopted by FHFA. *See* 12 U.S.C. § 4511, note.

approval under FHFA regulations, and specifically authorizes the Deputy Director, or his/her designee, to "prescribe additional or alternative procedures for any application for approval of any transaction, activity, or item." Section 1211.3, including the authority to prescribe additional or alternative procedures for seeking approval, is substantially similar to a Finance Board rule which FHFA adopted as its own subject to certain conforming modifications in 2014.[3]

In 2004, the Finance Board issued Regulatory Interpretation 2004-RI-01, which addressed the predecessor provision to the current FHFA rule. Because the prior rule had allowed the Finance Board to prescribe alternate processes for a required approval, the Regulatory Interpretation permitted a Bank to implement reported changes to its internal market risk model immediately after filing a notice with the Finance Board, absent a Finance Board objection. In particular, the Regulatory Interpretation noted that the process did not affect the Finance Board's authority under 12 CFR § 932.5(d) to direct a Bank to reverse any change made to the model or to make other changes to the model. As a result, the regulatory interpretation stated that using a notification process to fulfill the prior approval requirements of 12 CFR § 932.5(d) represented "a change in process rather than a change in the substance of . . . supervisory oversight." Given that Regulatory Interpretation 2004-RI-01 addressed a provision that FHFA substantively carried over from the Finance Board rules into Section 1211.3, these conclusions also apply to FHFA's authority under current rules.

The specific procedures described in Regulatory Interpretation 2004-RI-01 as later modified by Advisory Bulletin 2005-AB-06 currently govern the process under which Banks fulfill the regulatory requirement that they obtain approval of significant changes to a previously approved internal market risk model. This Advisory Bulletin embodies a further modification to the process.[4] It does not represent a change in FHFA's supervisory oversight. FHFA staff will continue to review a Bank's internal risk model during regularly scheduled examinations and may undertake a special review if circumstances warrant. FHFA also retains the authority to require model changes under 12 CFR § 932.5(d) if it deems such changes necessary.

Guidance

A Bank may implement a significant model change to a previously approved internal market risk model after proper notification to FHFA.[5] All model change notifications should be signed by a Bank officer and sent to the Manager, Risk Modeling Branch, FHFA Division of Bank Regulation. A Bank may notify FHFA of a significant model change in one of two ways depending on certain conditions.

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[3] *See*, Final Rule, Procedures and General Definitions, 79 Fed. Reg. 64661 (Oct. 31, 2014). *See, also*, 12 CFR § 907.3 (2008).

[4] Therefore, Banks should rely on the process described in this Advisory Bulletin for fulfilling the approval requirements of 12 CFR § 932.5(d). While this Advisory Bulletin supersedes the procedures described in Regulatory Interpretation 2004-RI-01, the reasoning and conclusions of that Regulatory Interpretation remain valid.

[5] What constitutes a significant model change depends on qualitative and quantitative factors determined by the Bank. The following modifications would constitute a significant model change regardless of any change in model output metrics: replacing, adding, or eliminating model input sources; replacing, adding, or eliminating model parameters and assumptions; changing a software product's processing components or computer code; or changing an application of the model.

Under the first option, a Bank may implement a significant model change that does not involve replacing its existing market risk model, absent a specific objection from FHFA, immediately upon notification to FHFA, provided that the Bank meets each of the following conditions:

1. The Bank's most recent Report of Examination (ROE) composite and market risk ratings were a 1 or 2;
2. The Bank's most recent ROE contains no Matters Requiring Attention (MRA) or violations pertaining to the Bank's market risk modeling;
3. The proposed model change does not decrease the Bank's estimated Value at Risk (VaR) by more than 10 percent relative to the existing approved model; and
4. The Bank provides appropriate documentation described below:
    a. Assumption Template (see Modeling Assumptions Template attachment);
    b. Written description of the model change indicating why the model change is an improvement over the current production model, and its effect on the Bank's market risk metrics, including but not limited to market value sensitivity to parallel and nonparallel interest rate shocks, duration of equity, convexity, key rate duration, constant prepayment rate (CPR), and VaR for at least two time periods no less frequently than monthly; and
    c. Certification that the proposed model change meets the Bank's Information Technology signoff requirements (e.g., change control procedures) and copies of other required signoff approvals.

If FHFA has no objections, it will acknowledge receipt of a Bank's proposed model change notification. Alternatively, if FHFA objects to a specific model change or does not believe the Bank meets the conditions described above, it will inform the Bank of the reasons for its objection or for believing the Bank does not qualify to implement the model change immediately upon notification.

Under the second option, a Bank seeking to replace its existing market risk model, or a Bank not meeting the conditions to implement a model change immediately upon notification, must obtain FHFA approval prior to implementing any material change to its market risk model. Under the second option, a Bank should provide the following documentation as part of its submission to FHFA:

1. Assumptions Template (see Modeling Assumptions Template attachment);
2. Written description of the model change indicating why the model change is an improvement over the current production model, and its effect on the Bank's market risk metrics, including, but not limited to, market value sensitivity to parallel and nonparallel interest rate shocks, duration of equity, convexity, key rate duration, CPR, and VaR;
3. Detailed instrument and sub-portfolio level results of parallel model runs and any other relevant testing the Bank performed. The Bank should submit parallel testing for at least two time periods no less frequently than monthly along with any internal analysis;
4. Any spreadsheets used to prepare input data for the model if these are affected by the

proposed model change; and

5. Certification that the proposed model change meets the Bank's Information Technology signoff requirements (e.g., change control procedures) and copies of other required signoff approvals.

Upon receipt of the notification, FHFA will determine whether a Bank's submitted documentation is complete within 30 calendar days, and will advise the Bank in writing whether additional documentation is needed. Once documentation is complete, FHFA will provide an approval or objection to the model change within 30 calendar days.[6]

Advisory bulletins communicate guidance to FHFA supervision staff and the regulated entities on specific supervisory matters pertaining to the FHLBanks, Fannie Mae, and Freddie Mac. This bulletin is effective immediately upon issuance. Contact Stefan Szilagyi, Manager, Risk Modeling Branch, FHFA Division of Bank Regulation at Stefan.Szilagyi@fhfa.gov with comments or questions pertaining to this advisory bulletin.

Attachment

Modeling Assumptions Template

[6] Thus, if a Bank submits appropriate documentation with the model change notification, the Bank could expect to receive an approval to the model change from FHFA within 30 calendar days.